INDUSTRIAL STANDARDIZATION

and Commercial Standards Monthly

ASA

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The American Standards Association is organized to provide systematic means of cooperation in establishing American Standards to the end that duplication of work and the promulgation of conflicting standards may be avoided; to serve as a clearing house for information on standardization work in the United States and foreign countries; to act as the authoritative American channel in international cooperation in standardization work

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Roper Outlines Bureau of Standards and ASA Program of Cooperation

In Letter to President Coonley, Secretary Roper Says Government Will Encourage Extension of Work

After several months of planning, a program of cooperation between the American Standards Association and the Bureau of Standards has been consummated. This program, which includes work on simplification, commercial standards, safety codes, and building and plumbing codes, has been summarized and interpreted by Secretary of Commerce Roper in a letter to President Coonley of the ASA, in line with President Roosevelt's economy program.

Regarding simplification and commercial standards work, Secretary Roper wrote:

"It will be useful to summarize our recent discussions in regard to cooperation between the Department of Commerce and the American Standards Association in the Simplification, Commercial Standards and code work. This the Association has already entered upon, the undertaking thus becoming a cooperative one between the Association and the Bureau of Standards.

"The policy upon which my request to the Association was based, and the objectives to be attained, remain the same. These were stated in my letter to you of July 10, and in my announcement to the press. They are, government economy, the assumption by industry and consumer groups of responsibility for those things which they can do for themselves and the development of a unified standardization program in a single movement equally representative of Government, industry and the general public.

"In accordance with this policy the Government will encourage the extension of the work of the Association and the utilization of its services by industries and groups desiring to establish standards.

"On the other hand, our discussions and subsequent developments have brought out certain points as desirable, specifically:

"1. In the Simplification and Commercial Standards work, the Bureau of Standards, in order that its facilities, experience and contacts may be utilized, is continuing on a reduced basis while the ASA on behalf of industry and its other consumer and general interest groups, is increasing its share in the activities and responsibilities for this work. In the meantime, I believe it is desirable to arrange for the Bureau to carry somewhat more of the work than has been possible with the drastically reduced personnel since July 1.

"The attached plan for the detailed operation of the cooperative undertaking meets with my approval."

The Plan

TEMPORARY PLAN OF COOPERATION BETWEEN THE AMERICAN STANDARDS ASSOCIATION AND THE BUREAU OF STANDARDS IN SIMPLIFICATION AND COMMERCIAL STANDARDIZATION WORK

Through cooperation between the Department of Commerce and the American Standards Association further progress is being made in the development of a unified national standardization program in a single movement equally representative of Government, industry and the general public. The Government will encourage the extension of the work of the Association and the utilization of its services by industries and groups desiring to establish standards. Meanwhile, it is realized that the facilities, experience, and contacts of the Bureau of Standards are valuable in the continuation of work on Simplification and Commercial Standards. In order to utilize these values this new plan provides for cooperation between the Bureau, on its reduced basis, and the American Standards Association. The latter, on behalf of industry and its consumer and general interest groups, is increasing its share in the ac-

Building and Plumbing Code Work Placed Under ASA Auspices

The American Standards Association at the request of the Secretary of Commerce is assuming responsibility for the development under its auspices and procedure of the work on Building and Plumbing Codes formerly carried on by the Department of Commerce through its Building Code Committee and the Subcommittee on Plumbing. The Department of Commerce undertook this work in 1921, and the work has received extensive recognition, the reports resulting from it having been adopted by many municipalities.

Dr. John Dickinson, Assistant Secretary of Commerce, has notified the members of these two committees that the ASA has been asked to undertake the development of this work. In a letter to Mr. Coonley, he said:

"In Secretary Roper's letter dated January 27, he stated that he believed the building and plumbing code work can be 'more advantageously carried on under a procedure similar to that outlined for the safety code work', that is, under ASA procedure. This constitutes an invitation to the American Standards Association to proceed with the further development of the building and plumbing code work and accordingly I have notified the members of the building and plumbing code committees of the Department of Commerce that these committees are being discontinued.

"The Bureau of Standards will be pleased to assist in every way possible in connection with the technical phases of the work similar to the assistance given by the Bureau in connection with the electrical safety code work."

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tivities and responsibilities for this work.

For the present, and in the absence of conditions which may call for special handling, Simplified Practice and Commercial Standards projects will be handled in accordance with the following plan as regular procedure:

1. A request to the American Standards Association or to the Bureau of Standards is made by an outside group for assistance in the development of a simplification or a commercial standard.
2. The recipient organization notifies the other, with copy of the request.
3. The scope of the project is outlined, and special problems of handling considered by conference of the two staffs. To facilitate administration of the work each organization will supervise the projects accepted by it. Each organization will currently advise the other on each significant development.
4. The project is assigned to a project man.
5. A steering group is organized by project man.
6. The draft standard is prepared or reviewed by steering group, contact being made with laboratory groups by Bureau staff. (Where research is necessary, the results will be published separately.)
7. The draft standard is sent by project man to organized groups having substantial interest, asking their active cooperation and announcing that plans are being made for a formal general conference.
8. The steering group, prior to general conference, officially considers criticisms of draft standard.
9. Invitations to general conference issued.
10. General conference held. (Attended wherever possible by members of both staffs.)
11. Draft standard as amended by conference circulated for written acceptance.
12. Study of returns by both staffs and representative of steering group, and recommendations formulated.
13. Recommendations transmitted:
    (*a*). To the Director of the Bureau of Standards;
    (*b*). To the Standards Council of the ASA.
14. Announcement of completion of project, and the effective date or dates.
15. Publication:
    (*a*). The standard will be published by the Bureau of Standards or by the ASA, or by both.
    (*b*). Normally, the standard, having full approval will be issued as either:

    American Simplified Practice
    or American Commercial Standard

    and the cover will bear the statement:

    Approved by the American Standards Association and promulgated by the U. S. Department of Commerce and the Association.

Bureau Continues Its Part In National Safety Code Program

The Bureau of Standards will continue its important role in the program of national safety codes which has been developing under the procedure of the ASA during the past 14 years. The entire program now includes some 40 completed codes and more than 20 others under development. The heads of state industrial commissions in a recent joint convention unanimously requested the NRA to give official recognition to these ASA codes.

In his letter to President Coonley, Secretary Roper has written:

> "The safety code work is now being carried out in harmony with the procedure of the ASA, and has been so handled for many years. For the present, the Bureau will undertake to continue to carry this responsibility in much the same way as hitherto, but upon a somewhat reduced scale, provided the ASA can on its part carry somewhat larger share of the responsibility. This I understand the ASA is prepared to do."

The Bureau of Standards is cooperating on 34 safety codes committees and is represented upon the Electrical Standards Committee, the United States National Committee of the IEC, and the Safety Code Correlating Committee. The Bureau is sponsor for the following safety code projects: Fire Tests of Building Construction and Materials; Elevators; Logging and Saw Mill Machinery; National Electrical Safety Code; Protection Against Lightning; Brakes and Brake Testing; Head and Eye Protection.

Research Needed as Basis for Household Standards

American retail consumers constitute the greatest group of victims of profiteering in the world today. They yearly hand over millions of dollars because they don't know how to buy. No other line of goods offers the complexity of buying that the grand array of household equipment does.

Research is the basic process for production of facts. Consumers need an assembly of facts upon which to build intelligent buying.

Standard performance requirements or specifications as outputs of unbiased research will be the sills of a new idea in buying. Using them, consumers will save themselves fully a fourth and perhaps a half of their present expenditures for household goods. In the field of household equipment, research opportunity beckons to research workers to produce these standards for equipment as fast as sound practices will permit.

Equipment for the household has the two aspects of home utility or usefulness and mechanical operation. We must depend on the home economist to judge the first and upon the engineer to judge the second. There must be cooperation between home economics and engineering if the most is to come from this great line of endeavor, household engineering, which overlaps both fields and requires both points of view.

Household equipment research which will bring forth these benefits to consumers must be based upon a broad program of testing and investigation, must be done by a high type of research talent, must be directed by both home economics and engineering points of view, and be accomplished under the soundest of research methods if it is to command the respect of manufacturers.

About one girl in ten has mechanical ability sufficient to succeed with mechanical things, and research talent does not occur as frequently as that. Careful training and development of research workers should be a part of the duties of any established research laboratory. A planned program of accomplishment, cooperation of agencies, and an everlasting insistence on dependable results with correct interpretation are the requirements.—*Abstracted from the "Journal of Home Economics," October, 1933, from a statement by P. G. Potter, Virginia Agricultural Experiment Station.*

ASA Inch-Millimeter Conversion Used by *Automotive Industries*

The American Standard Practice for Inch-Millimeter Conversion for Industrial Use (B48.1-1933) was used in compiling the 1934 annual Statistical Issue of *Automotive Industries* to express European automotive design specifications in inches.

Review of Piping Standardization Shows Vast Amount of Work Done

by
Sabin Crocker

Sabin Crocker, engineer of the Detroit Edison Company, secretary of the Sectional Committee on Standardization of Dimensions and Materials of Wrought Iron and Wrought Steel Pipe and Tubing (B36), and a member of the Sectional Committees on Pipe Flanges and Fittings (B16) and on Code for Pressure Piping (B36) under the procedure of the American Standards Association, has told the history of the national standardization work on piping in a current series of articles in *Heating, Piping* and *Air Conditioning*.

This abstract of the author's work is presented to give a summary picture of the work done. Reprints of the entire series will be prepared soon by the American Standards Association.

More progress has been made during the past 15 years in the standardization of piping than is represented by the aggregate of preceding years. A large share of the results have been attained under the procedure of the American Standards Association, through the administrative leadership of the American Society of Mechanical Engineers and the American Society for Testing Materials as chief sponsors of the projects.

The active participation of various trade associations including, among others, the Manufacturers Standardization Society of the Valve and Fittings Industry, the Association of American Steel Manufacturers Technical Committees, the Heating and Piping Contractors National Association, the Power Piping Society, the American Petroleum Institute, the Edison Electric Institute, and the American Gas Association made the work possible through supporting the projects during the formulation of standards and later through applying these standards to industry.

Piping standardization projects can be conveniently divided into three broad classifications:

(*a*). Dimensional standards
(*b*). Material specifications
(*c*). Safety codes

The first two are mutually interdependent—one could not exist without the other being implied at least; the existence of safety codes depends entirely on the other two. In view of this relation the status of piping standardization is discussed under the three topics named, and in the order indicated.[1]

Dimensional Standards

A large number of dimensional standards for piping are in existence or are yet in course of preparation. Many of the standards listed are in general use and have become so well known

[1] *Heating, Piping and Air Conditioning*, Oct. 1933–March, 1934.

that no further explanation is needed; several points of interest in connection with the newer standards and the proposed standards, however, are discussed in some detail in the articles referred to.

Prospective changes in the American Standard for Steel Flanged Fittings and Companion Flanges (B16e-1932) include tables giving complete dimensions for companion flanges, base fittings, and a table of adjusted pressure ratings for temperatures from 100 to 850 F (originally 500 to 850 F) in 50 F intervals.

The bolting requirements will be revised to call for American Standard Heavy Dimensions for Nuts as recently adopted by Sectional Committee B18.

The work of Sectional Committee B36 on Wrought Iron and Wrought Steel Pipe is reviewed, the proposed new pipe standards abstracted, and the committee's basic formula, which was used in computing the 1000 P/S schedules of wall thickness, explained. Attention is called to the satisfactory extent to which it was possible to use existing pipe wall thicknesses such as standard weight, extra strong, and double extra strong in making up the new schedules, thus avoiding commercial objections bound to ensue if existing manufacturing equipment had to be discarded. Due to the excellent way in which existing weights coincide with the new thickness schedules, it was possible through selection from existing sizes to bring the available and desired values into substantial agreement. The net result is a systematic set of schedules which should provide a sufficient variety of wall thicknesses for practical purposes in all industries, and at the same time eliminate many of the little-used intervening weights.

Copies of this proposed standard were distributed about a year ago for criticism by industry and it is now almost ready for letter ballot on acceptance as a tentative standard. Of interest also was a table accompanying the standard, which showed the specific application of the proposed American Standard pipe wall thicknesses to steam service pressures of 250, 300, 400, 600, 900 and 1500 lb per sq inch at 750 F.

Material Specifications

Neither dimensional standards nor material specifications are sufficient independently, because the adequacy of either depends on what is used for the other. Hence, when the Sectional Committee on Pipe Flanged Fittings (B16) first

Seven years of intensive work by this Sectional Committee will be culminated when the American Standard Code for Pressure Piping is published in the near future.

undertook to formulate dimensions for steel flanged fittings and companion flanges for a series of pressure ratings at a maximum temperature of 750 F, it was immediately recognized that flange dimensions, bolting, body-wall thickness, and the like, must be predicated on materials of established physical properties and chemical stability. The consensus was to the effect that such specifications could be drafted to best advantage by the American Society for Testing Materials, and accordingly an invitation was extended the A.S.T.M. to undertake their preparation. That society, in turn, assigned the problem of drafting specifications for high-temperature piping materials to Subcommittee XXII of Committee A-I on Steel, a new subcommittee created for the purpose.

Specifications were developed for alloy-steel bolting; carbon cast-steel flanges, fittings and valve bodies; forged carbon-steel companion flanges; and carbon-steel pipe, all for service at the rated pressures of the steel flange standard with temperatures up to 750 F. To accommodate the use of these materials at higher temperatures these specifications at first bore a note to the effect that "at the discretion of the designing engineer higher temperatures, with appropriate pressures, may be used." Later the idea of having a table of adjusted pressure ratings to suit operating temperatures other than the basic temperature of 750 F was developed as a joint project between the A.S.M.E., the A.S.T.M., and the various sectional committees under ASA procedure concerned. Eventually it was agreed in the case of carbon-steel flanges and fittings to extend these ratings from 100 F to 850 F, and through similar procedure in the case of A106 pipe to set adjusted pressure ratings from 700 F to 850 F.[2]

For several years the trend in power plants and oil refineries has been toward higher pressures and temperatures. High temperature alone

[2] The limits stated in the series of articles of which this is a summary were 500 to 850 F. These were changed after publication of the articles to the limits stated above; the adjusted pressure ratings for a given temperature still remaining the same.

does not constitute a particularly difficult problem in piping design, because thicker parts or stronger materials are readily applied. Operation at temperatures above 750 F, however, introduces a number of complications which involve plastic flow, or creep of materials; an increased tendency toward scaling and other manifestations of corrosion, especially at temperatures approaching 1000 F; and in some steels, a tendency toward an unfavorable change in the metal structure due to prolonged exposure to high temperature while under load. Due to the combination of these factors it is generally conceded that the use of carbon-steel piping materials should be confined, for long-life equipment at least, to temperatures below 1000 F.

A further need was sensed for standard specifications accompanied by a schedule of safe working stresses for alloy steels suitable for use at temperatures up to at least 1100 F. This problem also was referred to the A.S.T.M. After some preliminary investigation regarding the feasibility of the project, it was decided to proceed with specifications for alloy-steel piping materials for a temperature range from 750 to 1100 F. The work is well under way and it is hoped that these specifications can be published as A.S.T.M. tentative standards within the next year.

Other A.S.T.M. standards have been prepared recently for several varieties of pipe for which no specifications existed previously. These were for Class I electric-fusion-welded pipe for steam temperatures up to 850 F; ordinary-electric-fusion-welded pipe in two size ranges; electric-resistance-welded pipe; forge-welded pipe, and riveted pipe.

Code for Pressure Piping

Seven years of intensive work by the Sectional Committee on Code for Pressure Piping (B31) will be culminated by publication of the American Standard Code for Pressure Piping soon to be submitted to the ASA for approval. The Code has been awaited expectantly as a much-needed vehicle for setting up and standardizing on a national basis a set of minimum requirements of safe practice for piping.

Forty organizations felt sufficiently concerned to accept representation through 74 individual memberships on the sectional committee, and actually participated in drafting the Code. Among the principal groups represented were national engineering societies; numerous trade associations; several bureaus of the Federal government, including those of the Navy Department and the steam-boat inspection service; safety engineers; inspection agencies; insurance underwriters; U. S. Department of Labor; building and ship owners associations; steel, cast iron, and brass manufacturers; power, oil, gas, and water-supply interests; consulting engineers, and independent experts.

The Code is subdivided into sections, each dealing with a particular kind of piping and assigned for preparation to a subcommittee of experts in that field. In addition to these subdivisions according to service, there are two sections of a general nature applying to all services and dealing with material specifications and fabrication details. As set up at present, the following sections comprise the Code:

Section 1—Power Piping
Section 2—Gas and Air Piping
Section 3—Oil Piping
Section 4—District Heating Piping
Section 5—Fabrication Details
Section 6—Materials

The original intention was to have sections on hydraulic piping and refrigeration piping also, but the necessary cooperative effort for the first-mentioned section has not materialized. Preparation of a section on refrigeration piping is under consideration and it is expected that this section will be included in the second edition of the Code, if not in the first.

American Code Guides Australian Standards

The Standards Association of Australia, in initiating work on standards for refrigerators, recently adopted the American Standards as the basis of its work. Printed standards were forwarded from the ASA offices.

Cupola Practice Is Recommended

Simplified Practice Recommendation R154-34 on Cupola Refractories became effective March 15, 1934, the Division of Simplified Practice, National Bureau of Standards has announced. Signed acceptances were received from a sufficient number of manufacturers, distributors, users, and others interested to insure the general adoption of the program.

Civil Engineering Projects Under ASA Procedure Showing Marked Progress

The Fifth of a Series of Reviews on Standardization Projects Under the Procedure of the American Standards Association

The status of all civil engineering projects under the procedure of the American Standards Association, with the exception of the safety code projects, is summarized in the following review. The report of the safety code projects was published in the issue of November, 1933. The data presented in this review are taken from the files of the American Standards Association and are corrected to February 1, 1934, bringing up to date the review of civil engineering projects published in the issue of March, 1933.

Recent work of sectional committee on plastering indicates that certain A.S.T.M. specifications for lime may need revision.

The coordination of several gypsum and gypsum plaster standards adds materially to work accomplished in building field.

Final letter ballot of sectional committee due soon on revised draft for manhole covers and frames.

A1—Specifications for Portland Cement

Sponsor—American Society for Testing Materials.

In April, 1933, the Standard Methods for Sampling and Testing Portland Cement (A.S.T.M. C 77-32), which had been adopted by the Society in 1932 as a revision of previous standard methods, was approved as American Standard with the designation of A1.2-1933. Specifications for Portland Cement (A1a-1931 and A.S.T.M. C 9-30) were not revised but minor editorial changes were made in the text. (INDUSTRIAL STANDARDIZATION, December, 1932, page 319.)

A2-1926—Fire Tests of Building Construction and Materials

Sponsors—American Society for Testing Materials; ASA Fire Protection Group; U. S. Department of Commerce, Bureau of Standards.

During the past year A.S.T.M. Committee C-5 on Fire Tests on Materials and Construction, with which the sectional committee has actively cooperated for several years, recommended the revision and advancement to standard of the fire tests already approved as tentative standard, by the Society. At the annual meeting of the Society in June these recommendations were approved and the document was subsequently approved as an A.S.T.M. standard by letter ballot of the Society with the designation of C 19-33.

The revised document was also given consideration by the sectional committee. As a result of a letter ballot canvass, the sectional committee recommended to the sponsors that the revised document be submitted to the ASA for approval as American Standard. It is expected that the National Fire Protection Association will give consideration to the revised standard at its meeting in May.

A5-1930—Method of Test for Toughness of Rock

(*See A37*)

A6-1925—Specifications for Drain Tile

Sponsors—American Society for Testing Materials; U. S. Department of Agriculture.

The Standard Specifications for Drain Tile (A.S.T.M. C 4-24) are under the supervision of a sectional committee, which also functions as A.S.T.M. Committee C-6 on Drain Tile. This lat-

ter group made no formal report to the A.S.T.M. in June, 1933, covering its activities for the previous year.

A13-1928—Scheme for the Identification of Piping Systems

Sponsors—American Society of Mechanical Engineers; National Safety Council.

No revision of the American Recommended Practice approved in 1928 is under consideration at this time.

A19-1923—Method of Test for Voids in Fine Aggregate for Concrete

Sponsor—American Society for Testing Materials.

This standard test method (A.S.T.M. C 30-22) has not been changed during the past year.

A21—Specifications for Cast-Iron Pipe and Special Castings

Sponsors—American Gas Association; American Society for Testing Materials; American Water Works Association; New England Water Works Association.

Technical Committee 1 on Dimensions—

Subcommittee 1-A on Barrel of Sand Cast Pipe received a report on trench load tests of the strength of a cast-iron pipe line laid on wood blocks and a report giving tentative recommendations for thickness and pressure ratings for pit cast pipe. Final recommendations by the subcommittee are waiting for completion of tests of 48-inch pipes.

Subcommittee 1-B on Bells and Spigots, Lugs and Harnesses, received a report on stresses in bells of cast-iron pipe as determined by strain gage measurements while under external load.

Subcommittee 1-C on Types of Pipe Other than Sand Cast adopted a final schedule of tests for pipes other than pit cast to be tested in the same way as pit cast pipes have been tested. The business depression has prevented any of these tests being started as yet.

Subcommittee 1-D on Fittings adopted the combined reports on friction loss through fittings and the application of these data to a typical water distribution system as its final conclusions. Recommendations for a short body fitting standard were submitted by the Cast Iron Pipe Research Association, together with notes on strength tests. A study was begun on strength and pressure ratings of fittings.

Technical Committee 2 on Metallurgy, Processes and Tests—

Subcommittee 2-C, on Physical Tests and Test Specimens:—Studies were made of physical properties of test bars.

Technical Committee 3 on Corrosion and Protective Coatings—

Subcommittee 3-A on Water Corrosion of Cast Iron.—Since completion of tests at Massachusetts Institute of Technology on corrosion of cast iron, research on this topic has been continued by the Institute and arrangements are being made for publication of the results of both sets of tests.

Subcommittee 3-B on Organic Coatings appointed a special committee of manufacturers to recommend an accelerated test for organic coatings; to have tests made, under its direction, of the coating according to the proposed specification developed by the subcommittee, and, if the results were favorable, to send this specification to letter ballot of the subcommittee. The special committee had not reported by the end of 1933.

Subcommittee 3-C on Inorganic Linings extended its specification for thickness of cement-mortar linings to cover 30-inch to 48-inch pipe and fittings, recommending a minimum of 1/4 inch with a plus tolerance of 1/8 inch for all sizes. If this is approved by the higher committees it will be added to the tentative specification for cement-mortar lining previously adopted. A special committee on Bituminous Seal Coats for Cement Linings recommended three cold asphalt paints for this purpose.

Cement-lined pipes under test for this subcommittee at the Birmingham Water Works Company were reinspected during 1933 after a three-and-one-half-year test and reports were made on the condition of these pipes.

Subcommittee 3-E on Soil Corrosion.—Pursuant to the previously adopted policy, this committee has undertaken no work of its own, but its chairman and the chairman of technical committee 3 have kept in touch with the work of the Underground Corrosion Section of the Bureau of Standards.

A26-1930—Methods of Sampling Stone, Slag, Gravel, Sand and Stone Block for Use as Highway Materials

(*See A37*)

A27-1924—Method of Test for Apparent Specific Gravity of Coarse Aggregates

(*See A37*)

A31-1924—Specifications for Materials for Cement Grout Filler for Brick and Stone Block Pavements

Sponsor—American Society for Testing Materials.

The status of this project is given in the ASA BULLETIN (now INDUSTRIAL STANDARDIZATION) for March, 1932, page 104.

A35—Manhole Frames and Covers

Sponsors—American Society of Civil Engineers; ASA Telephone Group.

The sectional committee met in July, 1933 to discuss comments and suggestions on the proposed American Standard, which had been distributed in more than 6,000 sets of printed proof sheets. The draft standard is now being revised as a result of these discussions and is expected to be in shape for final letter ballot of the sectional committee in the near future.

A36—Rating of Rivers

Sponsor—U. S. Geological Survey.

The work scheduled for this committee comprises a scheme for the rating of the water power of rivers, including recommendations as to the units to be used. Recommendations covering the subject were completed by the committee under the auspices of the ASA in 1926. Formal submission for approval as American Standard was, however, postponed in view of the desirability of international agreement. Numerous conferences and discussions have been held under the auspices of the International Electrotechnical Commission and the World Power Conference. In 1930 under IEC auspices six definite recommendations were adopted and the English translation thereof was accepted by the World Power Conference and will be used as a basis for its collection of standard power statistics. Difficulty has been experienced in securing a translation into French which is satisfactory to all countries. Following the settlement of these difficulties it is now expected that the recommendations will be considered by the sectional committee with a view to their formal submission for adoption as American Standard.

Hydro-Extractor Codes Sent to British Group

The American Standards Association forwarded the American Standards on laundry machine operation (safety code) and other technical literature covering phases of hydro extractors for use in chemical plants, gas works, dry cleaning concerns and laundries to the British Standards Institution which is starting a standardization project of this nature.

A37—Methods of Testing Road and Paving Materials

Sponsor—American Society for Testing Materials.

Although the personnel of this sectional committee, which was organized during 1926-27, is identical with that of A.S.T.M. Committee D-4 on Road and Paving Materials, the scope of the sectional committee is limited to methods of testing road and paving materials. No new standards have been submitted during the past year, but consideration is being given to a possible revision of A.S.T.M. Standard Method of Test for Distillation of Bituminous Materials Suitable for Road Treatment (D 20-30). This standard when revised may be submitted to the ASA.

Six standards are under the supervision of this sectional committee as follows: A37.1-1930—Method of Test for Penetration of Bituminous Materials (A.S.T.M. D 5-25); A37.2-1930—Method of Float Test for Bituminous Materials (A.S.T.M. D 139-27); A37.3-1930—Method of Test for the Determination of Bitumen (A.S.T.M. D 4-27); A5-1930—Method of Test for Toughness of Rock (A.S.T.M. D 3-18); A26-1930—Methods of Sampling Stone, Slag, Gravel, Sand, and Stone Block for Use as Highway Materials (A.S.T.M. D 75-22); and A27-1924—Method of Test for Apparent Specific Gravity of Coarse Aggregates (A.S.T.M. D 30-18). Of these standards, A5 originally received approval as American Tentative Standard in 1931, A26 and A27 in 1924. In 1929, A37.1, A37.2, and A37.3 were approved as American Tentative Standards. In 1930, after favorable action by the sectional committee and the sponsor, all of these standards except A27 were advanced to the status of American Standard.

A38-1933—Steel Spiral Rods for Concrete Reinforcement

Sponsors—U. S. Department of Commerce, Bureau of Standards; Concrete Reinforcing Steel Institute.

The revised standard, Simplified Practice Recommendation R53-32, which was approved by ASA in January, 1933, has not been changed during the past year. The text of this standard presents data on recommended sizes of reinforcing rods.

A40—Standardization of Plumbing Equipment

Sponsors—American Society of Mechanical Engineers; American Society of Sanitary Engineering.

Subcommittee 5, on Traps, has revised its proposed standard for brass lavatory and sink traps, brass traps, lead traps, vitreous china traps and interceptors, catch basins, and miscellaneous traps. This revised draft is ready to be published for general criticism and comment. A new subcommittee on Gasoline, Oil and Grease Separators or Interceptors is being organized.

Subcommittee 6, on Brass Plumbing Products has not reported any progress during the last year.

Subcommittee 7, on Copper Water Tube Fittings:—The status of the work is the same as last year.

Subcommittee 8, on Cast Iron Soil Pipe, published a proposed standard for general criticism and made certain changes on the basis of the comments received. The revised draft was approved for submission to letter ballot of the sectional committee.

A41—Recommended Practice for Brick Masonry

Autonomous Sectional Committee.

There has been no progress to report.

A42—Specifications for Plastering

Sponsors—American Institute of Architects; American Society for Testing Materials.

This sectional committee, which was reconstituted a year ago with F. Leo Smith, Technical Secretary of the American Institute of Architects as chairman, held a meeting in Chicago on June 29, 1933. During the meeting, drafts for proposed specifications for lime plastering, gypsum plastering, Portland cement plastering, and stucco were discussed, and certain recommendations on A.S.T.M. specifications for lime were made for transmittal to the Society. Since the meeting the drafts of specifications there discussed have been given active consideration by subcommittees and are now ready for transmittal to the sectional committee.

A43-1930—Specifications for Putty

Sponsor—American Society for Testing Materials.

Following a decision by the Federal Specifications Board in 1933 to the effect that it did not care to submit Federal Standard Stock Catalog designation TT-P-791 as a revision of U. S. Government Master Specifications for Putty FSB No. 283, which had been approved as American Tentative Standard in 1930, the Standards Council voted to withdraw approval of these specifications for putty and further voted to invite the American Society for Testing Materials to assume sponsorship for this project.

A44—Method of Test for Organic Impurities in Sands for Concrete

A45—Method of Test for Sieve Analysis of Aggregate for Concrete

Sponsor—American Society for Testing Materials.

In 1929 the A.S.T.M. submitted two standards with the titles given above, designated as C 40-27 and C 41-24, for approval as American Standards. After submittal it was found that certain provisions of these standards were not acceptable to another group and the Society requested the ASA to withhold consideration of the approval of these standards, pending deliberations in A.S.T.M. Committee C-9 on Concrete, which has jurisdiction over these methods under the Society's procedure. In 1932 tentative revisions covering the sections which had been questioned were published by the Society and these were adopted and incorporated into the standards in 1933. It is expected that the Society will shortly submit the revised documents for approval as American Standard under the proprietary method.

A47-1932—Steel Reinforcing Bars

This standard, published by the Bureau of Standards as a Simplified Practice Recommendation (R26-30), was submitted jointly to the ASA by the Concrete Reinforcing Steel Institute and

the Bureau of Standards and approved as American Standard in 1932. The text of the standard covers cross-sectional areas for steel reinforcing bars ranging from 0.05 to 1.56 sq in.

A48-1932—Forms for Concrete Joist Construction Floors

Provisions of this standard cover the main dimensions of removable and permanent forms, domes or pans of wood, steel, or other material used in concrete ribbed-floor construction. The standard published as Simplified Practice Recommendation (R87-32) was submitted jointly by the Concrete Reinforcing Steel Institute and the Bureau of Standards.

A49—Specifications for Gypsum and Gypsum Plasters

Sponsor—American Society for Testing Materials.

Following recommendations from A.S.T.M. Committee C-11 on Gypsum, the Society submitted the following five specifications for gypsum and gypsum plasters for approval as American Standard:

Specifications for Gypsum (A49.1-1933); (A.S.T.M. C 22-25)
Specifications for Calcined Gypsum (A49.2-1933); (A.S.T.M. C 23-30)
Specifications for Gypsum Plasters (A49.3-1933); (A.S.T.M. C 28-30)
Specifications for Gypsum Molding Plaster (A49.4-1933); (A.S.T.M. C 59-30)
Specifications for Gypsum Pottery Plaster (A49.5-1933); (A.S.T.M. C 60-30)

These specifications were approved as American Standards in June, 1933, and the Society was granted proprietary sponsorship to care for future revisions. The provisions of these standards represent several years work by A.S.T.M. Committee C-11 on Gypsum. All of these standards cover materials currently produced by the industry and they are now available for engineering, industrial, and agricultural users. (See INDUSTRIAL STANDARDIZATION, June, 1933, pages 102 and 103.)

ASA Exhibits Codes At Safety Conference

The American Standard Association had a booth with a display of published safety standards at the Fifth Annual Greater New York Safety Conference, March 6 and 7. The conference was held under the auspices of the Metropolitan Chapter, American Society of Safety Engineers, the Engineering Section of the National Safety Council, and 56 cooperating organizations.

Cyril Ainsworth, assistant secretary of the ASA and in charge of its safety code work, was general chairman.

ASA Associate Membership Taken by Hospital Group

All services and all privileges, except representation on the Standards Council, are now offered by the American Standards Association in the new Associate Memberships recently made available for trade, technical, and professional bodies.

Many associations, with limited interest in standardization, can keep in constant touch with projects and will be able to check in on all American and foreign standards work in which they may have either a direct or remote interest by joining the ASA.

The American Hospital Association has become an associate member of the ASA, which gives that body full access to the ASA information service, which includes a file of more than 12,000 American and foreign standards, a discount on their purchases of approved American Standards, and subscriptions to INDUSTRIAL STANDARDIZATION AND COMMERCIAL STANDARDS MONTHLY.

The hospital group plans to use the facilities of the ASA in further developing its own standards program. The association is composed of 1,587 hospitals and institutions and has 4,231 personal members.

ASA Approves Initiation of Shrinkage Project

Initiation of a project for the standardization of Specifications for Shrinkage of Woven Cotton Yard Goods, under the procedure of the American Standards Association, requested by the Textile Shrinkage Conference of the New York Board of Trade, has been approved by the ASA Standards Council.

The project will cover "Specifications for shrinkage of woven cotton yard goods as delivered to the purchaser, but not for any article manufactured from woven cotton yard goods," according to the tentative scope.

Older Non-Destructive Tests Should Not Be Abandoned for Radiography[1]

Field is Barely Scratched in Scientific Measurement as Rays Begin to Play Important Part in Determining Characteristics

Since engineering began, the engineer has always been faced with the problem of devising means of examining the strength and soundness of his structures and products without, in the process of testing them, destroying, weakening, or otherwise unfitting them for the duty for which they are designed.

The common solution of the problem has been, and still is, found in the adoption of the principle of testing by sample. A portion of the material of which the structure is to be composed is abstracted at some stage of its manufacture and is tested in a manner appropriate to the duty which it would have fulfilled had it been built into the structure. Alternatively, if circumstances permit, an example of the actual product, one of many similar products, is sacrificed in a test to destruction or otherwise. If an actual example of the product is too large or too costly to destroy, a model may be constructed and tested.

None of these processes is completely satisfactory; all three involve an element of gambling. We gamble upon the test specimen being truly representative of the rest of the material in the structure; we gamble upon the selected example of the product being truly representative of its fellows produced by similar methods from similar materials; and upon the model being truly representative of the full-scale product.

In addition, the test specimen process is unsatisfactory because its realism depends upon our ability to assess the duty which the material tested, had it formed part of the structure, would have been required to fulfill. In other words, the conditions imposed on the test specimen are realistic to the same extent as our knowledge, acquired by mathematical analysis or otherwise, is complete concerning the conditions imposed on the structure in practical use.

In more cases than our pride as engineers would permit us to confess in non-engineering circles, our knowledge concerning the practical conditions which our structures and products have to sustain is very incomplete and defective. As a consequence we can, in the majority of cases, do no more than apply to the test specimen certain conventional, almost arbitrary, conditions founded more on past experience than upon exact science. For example, a batch of material will be accepted or rejected on the basis of the behavior of a test specimen under a tensile force even although it is known that some of the material will be used in shear or compression. The argument behind such a proceeding is that if the material is sound under tension it will almost certainly not be defective under any other kind of stress.

Conditions of Non-destructive Tests

The obvious defects of testing by sample can only be avoided by devising some system of non-destructive testing and its application to the completed structure or finished product. Clearly the test must be not only non-destructive in the dictionary sense, but also non-hurtful in any possible engineering connotation. Further, in addition to being non-destructive and non-hurtful, the conditions imposed on the structure for the purpose of carrying out the test must be natural conditions and must not be such as to require it or its parts to fulfill duties foreign to those for which it was designed.

Equally must any test of an engineering structure be unsatisfactory if the test duty either by its nature or its extent is abnormal. Any test, for example, which necessitates the product, after testing, being treated, thermally or otherwise, to ensure its restoration to the untested condition, cannot be regarded as a completely satisfactory form of non-destructive test.

[1] Abstract of an article published in *Engineer*, London

It seems desirable to make some distinction between non-destructive testing and non-destructive examination. Testing, in engineering phraseology, has obtained a well-established meaning in the sense of measuring something. To test an engine or motor commonly means to measure its horse-power. To test a material is generally interpreted as meaning to measure the strain which it exhibits under a given stress.

To tap a railway tire with a hammer may colloquially be called a test, but speaking with scientific precision we would prefer to call it an examination. Under the heading of examination rather than testing we would also, for the time being at any rate, prefer to classify all methods of a radiological nature. Rapidly as the use and usefulness of X-rays and gamma rays are advancing in engineering practice, it is still true that radiography as applied to metals has as yet barely entered the measurement phase. It serves in a remarkable and valuable way as a means of detecting the existence of certain, not all, types of internal flaw, but it is only with difficulty and with considerable latitude for error that it can at present be used to measure the size of the flaws and their positions within the bodies examined.

Ray Developments Expected

It is possible that in this respect and others to which expression in terms of measurement is appropriate, the new technique covering the detection of crystal lattice distortion by the reflection of X-rays may soon result in very considerable developments. It is conceivable, for example, that by the application of the reflected ray method to a structure in service it may be possible, not only to detect the existence of strain in it or any of its parts, but to measure that strain and to convert it into terms of the corresponding stress. In such event radiography would provide a unique system of non-destructive testing.

For the moment the process which it employs is certainly non-destructive; but it is of more than philological interest, it is of scientific importance, to recognize clearly that it is a process of examination and not one to which at present the term testing can properly be applied.

It appears to be just possible that, by another application of our modern capacity for misnaming things, the expression non-destructive testing will soon become synonymous among engineers with radiological examination. Such a step would be regrettable, not only because of the misnomer but because it would tend to hide the fact that other non-destructive methods, including some which fully earn the description of non-destructive testing, are practised or are possible.

There could, for example, hardly be a more complete example of a true non-destructive test than that commonly applied to a finished bridge, involving the measurement of its deflection under different given loads. A test of this nature confirms the suitability of the design, the accuracy of the calculations, and the soundness of the materials.

Similarly, the usual practice of testing a pressure vessel hydraulically, provided it is accompanied by measurements of the extension in the dimensions of the vessel and of the recovery of the strain after the pressure is removed, is a true and complete non-destructive test. On a smaller scale various electrical methods, of an examinational rather than of a testing nature, are practised. Surface cracks, for example, can be detected by placing the specimen in a magnetic field and sprinkling it with fine iron filings or spraying it with a colloidal solution of iron.

Again, not merely surface, but deep-seated defects, can be detected and their approximate size and position determined by passing a current of direct electricity through a length of the body under examination and by noting the extent and manner of the obstruction to the flow as compared with the flow in a sound part or specimen of the material.

This method was developed to a high degree a few years ago by the late Dr. E. A. Sperry, who applied it very successfully for detecting flaws and cracks in rails either as they came from the rolls or, subsequently, after they had been laid in the track. Other forms of non-destructive examination or testing might readily be mentioned, but enough has been said to show that the methods employed are wide alike in their nature and in their application.

A.S.T.M. Petroleum, Lubricants Committee D-2 Meets in Detroit

At the recent series of meetings held in Detroit under the auspices of the American Society for Testing Materials Committee D-2 on Petroleum Products and Lubricants, the progress of current work was reviewed and new activities were launched.

Technical Committee B on Motor Oils reported that changes in automobile design and construc-

tion are bringing to the forefront problems of lubrication which indicate that, although the car owner may expect to spend slightly more than he has been accustomed to in the past for motor lubricants, much larger savings may be expected in maintenance charges. This committee is studying questions related to decreased bearing clearances, displacement of bearing metals, and circulation of motor oils, particularly at low temperatures.

Gasoline Specifications

Technical Committee A discussed the preparation of specifications for motor gasoline and it was decided unanimously to proceed with this work through a subcommittee on which both producers and consumers will be represented.

Progress reports were presented on various other projects, including vapor lock, gum formation, and A.S.T.M. method of test for the determination of octane numbers.

In accordance with recommendations from Committee D-2 the A.S.T.M. has approved for publication as a tentative standard the Methods of Test for Determining Gum Content of Gasoline (D281-34T). Results from this test are indicative of the amount of gum deposition which may take place in service if the gasoline is used immediately, but give no indication of the gum stability of motor fuel upon storage.

Ainsworth Is Appointed to Geneva Safety Committee

Cyril Ainsworth, assistant secretary of the American Standards Association, has been appointed a member of the accident prevention committee of the League of Nations International Labor Office, Geneva. This is the first time that Americans have been appointed to any of the standing committees, of which the accident prevention group is one. M. Kjaer of the U.S. Department of Labor and Colonel Henry A. Reninger of the Lehigh Portland Cement Company will also serve on this committee. Two monographs of interest to ASA groups are now being considered by the American members. They cover Abrasive Wheels and Construction and Use of Lifts.

Mr. Ainsworth, who heads the accident prevention work for the ASA, for nearly ten years was a staff engineer for the Pennsylvania Department of Labor and Industry in safety code development and enforcement work.

Standards Clause Is Suggested for Codes

The Consumers' Advisory Board of the NRA has proposed that the following standards clause be adopted in all codes, subject to modifications as may be deemed necessary in each case:

> "Within one month after the effective date of this code the Code Authority shall appoint a committee, so constituted as to give due consumer and governmental representation, to make a study, with a view to the establishment within one year following, of classifications and standards of dimensions, qualities, and the labeling of the products of the industry wherever such standards are deemed feasible. It shall be an established policy that the standards so established shall be submitted at the earliest possible date for general approval and promulgation through the procedure of the American Standards Association, the National Bureau of Standards, or any other standards body now existing or to be established which will guarantee both governmental and consumer representation in the final drafting and promulgation of the standards."

This "Suggested Standards Clause" has been submitted to the Code Advisory Staff by Dexter M. Keezer, director.

Mining Committee Officers Re-elected for 1934

The annual meeting of the Mining Standardization Correlating Committee was held on February 21, 1934, in connection with the Annual Winter Meeting of the American Institute of Mining and Metallurgical Engineers. The following were re-elected as officers for 1934:

E. A. Holbrook, dean, College of Engineering, University of Pittsburgh, Pittsburgh, Pa., *chairman*
Lucien Eaton, Milton, Mass., *vice chairman*
Warren R. Roberts, Roberts and Schaefer Company, Chicago, Ill., *vice chairman*

W. Val DeCamp, Anglo-American Mining Corporation, Ltd., Randsburg, California; W. E. Goodman, Goodman Manufacturing Company, Chicago; and Rush N. Hosler, Pennsylvania Compensation Rating and Inspection Bureau, Harrisburg, Pennsylvania, with the officers, comprise the Executive Committee.

For 1934 the following changes in personnel have taken place:

G. B. Southward, mining engineer of the staff of the American Mining Congress is now an alternate for this organization.

E. B. Wagner, Lehigh Valley Coal Company, Wilkes-Barre, Pa., has been appointed representative of the American Institute of Electrical Engineers.

At the meeting Mr. Goodman, representing the National Electrical Manufacturers Association, indicated that during the coming year it might be possible to prepare a draft of the specifications for trolley type mine locomotives, even though the N.E.M.A. committees in this field might not complete their recommendations on storage and combination type locomotives.

A general discussion of the growing recognition of mineral dust hazards brought out the desirability for maintaining close contact with research in this field. D. Harrington, of the U. S. Bureau of Mines, agreed to keep the members of the MSCC advised of significant developments.

New Publications Are Available At ASA Library

The new publications listed below are now on file in the Library of the American Standards Association and may be purchased at the prices indicated, or may be borrowed.

The Library of the American Standards Association has a file of more than 12,000 standards published by American associations and technical societies, as well as by foreign standardizing bodies, which may be purchased or borrowed from the ASA office. Other publications on standards and standardization are also obtainable through the Library.

ASA members have the privilege of calling upon the Library for research assistance on any questions in connection with standards and standardization.

INDEX TO A.S.T.M. STANDARDS AND TENTATIVE STANDARDS. *American Society for Testing Materials, 260 South Broad Street, Philadelphia. No charge.*

All specifications, methods of testing, recommended practices, and definitions.

BOOK OF A.S.T.M. TENTATIVE STANDARDS. *American Society for Testing Materials, 260 South Broad Street, Philadelphia. Cloth binding $8.00; heavy paper covers $7.00.*

Presenting all tentative specifications, methods of test, and definitions of terms now before the Society. This volume of 1136 pages contains 223 tentative standards, of which 47 are being issued for the first time. Forty-one tentative standards revised in 1933 are given in their latest approved form.

A.S.T.M. PROCEEDINGS, VOLUME 33. *American Society for Testing Materials, 260 South Broad Street, Philadelphia. In two parts. Prices for each part are as follows: paper binding $5.50; cloth binding $6.00; half-leather $7.00.*

Part I contains the annual reports of 40 A.S.T.M. standing committees, and of several research and sectional committees, and technical papers; 47 specifications and methods of test for widely used engineering materials published for the first time in 1933; and 37 tentative standards which were revised in 1933. Reports cover ferrous and non-ferrous metals, and include comprehensive data on the physical properties of cast iron and on corrosion of metal coatings. Building and road and paving materials, coal and coke, rubber and textile products, timber, electrical insulating materials, and petroleum products and lubricants are included.

Part II contains technical papers and discussions of the A.S.T.M. annual meeting, June, 1933. The Symposium on Cast Iron, sponsored by the American Foundrymen's Association and the A.S.T.M., and the 1933 Marburg lecture on "Crystalline Structure in Relation to Failure of Metals—Especially by Fatigue" which was delivered by Dr. H. J. Gough of the National Physical Laboratory, London, England, appear.

A SYMPOSIUM ON CAST IRON. *The American Society for Testing Materials, 260 South Broad Street, Philadelphia, and the American Foundrymen's Association, 222 West Adams Street, Chicago. Cloth covers $1.25; heavy paper covers $1.00.*

Data on the composition, metallurgy, properties, and applications of many grades of cast iron are given.

COST AND PRODUCTION HANDBOOK, *edited by L. P. Alford, assisted by a board of 80 cost accounting authorities, manufacturing executives, and engineers. The Ronald Press, New York, flexible binding, 1600 pages, $7.50.*

The editors present, in one volume, based on the practice of representative companies, "practical working information" on all phases of industrial operation. The 28 sections cover such subjects as budgets, cost analysis, depreciation, handling materials, labor, machinery, operating charts, purchasing, standardization, and timekeeping.

Section six is devoted to simplification and standardization. Standardization within the company and the organization of a company standards division receive extensive consideration and charts illustrate the company standards organization. Definitions, the classification of standards, a reproduction of the American Standard table of preferred numbers, and many examples of the different types of standardization are also included. A discussion of national standardization and the organization of the American Standards Association completes the section.

MEMORANDUM ON THE INTERNATIONAL ELECTROTECHNICAL COMMISSION. *International Electrotechnical Commission, London. No charge.*

Presenting an up-to-date and accurate account of the IEC organization and activities.

SIEVES (SCREEN SIZES OF CANNED PEAS), SIMPLIFIED PRACTICE RECOMMENDATION R149-33. *Division of Simplified Practice, National Bureau of Standards. Available from Superintendent of Documents, Government Printing Office, Washington, D. C., and from ASA office, 5 cents.*

Lists sieve opening sizes to be used in separating peas into three size groups—small, medium, and large.

GLASS CONTAINERS FOR COTTAGE CHEESE AND SOUR CREAM, SIMPLIFIED PRACTICE RECOMMENDATION R148-33.

Division of Simplified Practice, National Bureau of Standards. Available from Superintendent of Documents, Government Printing Office, Washington, D. C. and from ASA Office, 5 cents.

Covers base diameter, height of bottle, height of finish, cap seat diameter, and over-all diameter of finish of roll of bottles for 8, 12, and 16 fluid ounce glass containers for cottage cheese and sour cream.

LIST OF PUBLICATIONS OF INTEREST TO HOUSEHOLD PURCHASERS. LETTER CIRCULAR LC-322. *Compiled by the Division of Specifications, National Bureau of Standards. Available from the Superintendent of Documents, Government Printing Office, Washington, D. C. No charge.*

Lists all Bureau of Standards publications on household subjects, Federal Specifications for household commodities, and certain publications of the National Committee on Wood Utilization.

AMERICAN TENTATIVE STANDARD SPECIFICATIONS FOR DOUGLAS FIR POLES (05g1-1933) *and* AMERICAN STANDARD DIMENSIONS OF DOUGLAS FIR POLES (05g2-1933). *American Standards Association, 29 West 39th Street, New York. One pamphlet, 20 cents. 20 per cent discount to ASA Members.*

New standard recently approved by ASA. ASA Telephone Group, sponsor.

AMERICAN TENTATIVE STANDARD SPECIFICATIONS FOR LODGEPOLE PINE POLES (O5f1-1933) *and* AMERICAN STANDARD DIMENSIONS OF LODGEPOLE PINE POLES (O5f2-1933). *American Standards Association, 29 West 39th Street, New York. One pamphlet, 20 cents. 20 per cent discount to ASA Members.*

New standard recently approved by ASA. ASA Telephone Group, sponsor.

AMERICAN STANDARD FOR ULTIMATE FIBER STRESSES OF WOOD POLES (05a-1933). *American Standards Association, 29 West 39th Street, New York. 10 cents. 20 per cent discount to ASA Members.*

Standard revised to include lodgepole pine poles and Douglas fir poles, recently approved by ASA. ASA Telephone Group, sponsor.

AMERICAN RECOMMENDED PRACTICE FOR GEAR MATERIALS AND BLANKS (ALLOY STEEL, CAST STEEL, FORGED AND ROLLED CARBON STEEL, BRONZE AND BRASS) (B6.2-1933). *American Gear Manufacturers Association, 201 First National Bank Building, Wilkinsburg, Pa., and American Society of Mechanical Engineers, 29 West 39th Street, joint sponsors. Published by A.S.M.E. 50 cents. 20 per cent discount to ASA Members if purchased through the American Standards Association.*

A Quality Mark for Electrical Apparatus

The following is a reprint from "Electrical Review," London:

The encouragement and maintenance of a high quality in electrical accessories are of great importance, if only for the purpose of keeping up the reputation of electricity supply as a public service. In the United States for quite a time the fire underwriters have used their influence to force those insuring premises to use only accessories which have passed inspection and tests at their proving house; Canada, after accepting U. S. A. standards for some time, now has a bureau of its own. In Denmark, materials and accessories cannot be used on new work unless they have been passed by a Government Department, and Italy is moving in the same direction.

In France, for some years, a committee of the Union des Syndicats de l'Electricité has been examining accessories and giving those which comply with the wiring and general safety rules of the society the right to bear a special mark of quality known as the "U. S. E." The Union has published a list of items which have been examined and passed by the committee in a brochure of 48 pages published at its offices at 54, Avenue Marceau, Paris. The accessories listed cover a very wide range. The currents range up to about 25 amperes, and the accessories are all designed for 250 volts and to suit French practice.

The number of makers who have submitted apparatus is 41, including nearly all those well known in the French accessories trade. About a year ago the International Union of Power Producers through a number of its members, with the aid of certain national associations, supported a movement for the co-ordination of marks of quality requirements of several countries.

It might be noted that under the French quality mark it is the performance that is primarily standardized, not so much the operating dimensions, except in cases such as bayonet sockets and similar items. It follows that when French owner of premises get fully accustomed to look for a mark on accessories to show not merely that they are up to a certain standard, but also that they are checked during manufacture from time to time, they will make a point of asking for material so marked to be used on work done for them.

There is no doubt that most British makers of electrical accessories who have any standing have done much to keep up the quality of their wares. The organization of marks of quality at home would tend to keep the lowest grade of accessories whether made at home or abroad off the market.

It might be noted that in France the movement toward the adoption of marks of quality has gone beyond electrical things and has now been adopted in connection with several other trades under the mark of "Unis France."

Wide Diversity of Interests Shown in ASA Board; Council

Analysis of the Board and Standards Council membership of the American Standards Association shows an interesting diversity of interests represented.

The important Standards Council, which passes on all standards submitted by technical committees, is composed of 56 members and is fairly evenly divided in four broad categories, *viz:* (1) manufacturing; (2) utilities; (3) staff members of technical societies, independent consulting engineers, educators, and insurance interests; and (4) government officials.

The classification, as of March 1, follows:

Votes on Standards Council Classified According to Payroll Connection of Members—

Classification	*Number*	*Percent of Total*
Manufacturing	13	24.1
Utilities	11	20.3
Technical Societies[1]	5	9.3
Insurance	7	13.0
Government	18	33.3
	54	100.0

Votes on Standards Council Classified According to Chief Interest of Member Body Represented—

Classification	*Number*	*Percent of Total*
Manufacturing	9	16.7
Utilities	11	20.4
Technical Societies	13	24.1
Insurance	6	11.1
Government	15	27.7
	54	100.0

Member Bodies on Board of Directors—

Classification	*Number*	*Percent of Total*
Manufacturing	3	18.7
Utilities	5	31.3
Technical Societies	5	31.3
Insurance	2	12.5
Government	1	6.2
	16	100.0

Votes on Board of Directors Classified According to Payroll Connection of Members—

Classification	*Number*	*Percent of Total*
Manufacturing	6	37.5
Utilities	6	37.5
Technical Societies[1]	1	6.25
Insurance	2	12.5
Government	1	6.25
	16	100.0

[1] Staff members, independent consulting engineers, and educators.

Member Body Groups on Standards Council—

Classification	*Number*	*Percent of Total*
Manufacturing	7	18.9
Utilities	6	16.2
Technical Societies	11	29.7
Insurance	5	13.5
Government	8	21.7
	37	100.0

Foreign Standards Available from ASA

New foreign standards available to Sustaining-Members for loan or purchase through the ASA office are listed below. They are available in the language of the country under which they are listed. In requesting copies of the standards it is necessary to list only the ASA serial numbers preceding the titles. Send either a post-card or a note containing only the name of the person wishing to receive the standards, and the numbers of the standards desired. The card or envelope should be addressed to the American Standards Association, 29 West 39th Street, New York.

Serial Number

Italy

470. Rounded countersunk nibbed head screws, rough, metric thread MA (normal)
471. Snap nibbed head screws, cold pressed and rolled type, metric thread MA (normal)
472. Snap nibbed head screws, rough, metric thread MA (normal)
473. Taper head screws (carriage tire bolts), rough, metric thread MA (normal)
474. Tolerances for widths across flats and wrench openings.

Norway

475. Cans and pails for honey and marmalade
476. Glasses for honey, conserves, and jam
477. Wooden cases for honey and marmalade in cans or pails
478. Pasteboard cases for honey and marmalade in cans or pails
479. Doors, details for ordinary plain
480. Doors, type of drawings for double leaved
481. Doors, type of drawings for ordinary
482. Bushings for bearings
483. Conical shaft-ends (short and normal length) for machines and apparatus.
484. Cylindrical shaft ends for machines and apparatus
485. Diameters of transmission shafting

486. Ferrule couplings for transmission shafting
487. Flange couplings, for transmission shafting
488. Heights of centers of machines
489. Pulleys
490. Sockets and studs
491. Standard numbers of revolutions for machine and transmission shafting
492. Cast-steel flanges, NP 64
493. Cast-steel flanges, NP 100
494. Flange bore, grooves for flanges
495. Flange tightening, male and female, for flat packing, NP 10-40
496. Flange tightening, tongued and grooved, NP 10-40
497. Flange tightening, tube against tube, NP 64 and 100
498. Flanges for rolled-in tubes, NP 1-6
499. Flanges for rolled-in tubes, NP 10 and 16
500. Flanges for rolled-in tubes, NP 25 and 40
501. Loose flanges for flanged tubes, NP 1 and 2.5
502. Loose flanges for flanged tubes, NP 6
503. Loose flanges for flanged tubes, NP 10
504. Packing for flange tightening
505. Packing for flanges with flat surface, nominal pressure NP 1-40
506. Threaded flanges, oval, NP 1-6
507. Threaded flanges, round, NP 1-6
508. Threaded flanges, round, NP 10 and 16

Sweden

509. Hard-drawn copper wires and hard-drawn copper lines
510. Rules for instrument transformers
511. Testing specifications for electrical ranges

Holland

512. Derrick pivots
513. Pivot bearings
514. Cement, definitions and test specifications
515. Conversion tables, inches (in 64th) to millimeters (in one decimal)
516. Conversion tables, inches (in 64th) to millimeters (in three decimals)
517. Conversion tables, inches (in 64th) to whole millimeters
518. Conversion tables, inches (in three decimals) to millimeters (in three decimals)
519. Conversion tables, millimeters (in three decimals) to inches (in four decimals)
520. Sewerage systems, elements; gratings for cast-iron catch basins
521. Standard sizes of paper
522. Steel (rolled and forged), qualities and test specifications
523. Technical drawings, bending lists for drawings for reinforced concrete construction
524. Technical drawings, indication on charts and drawings of locations and groundworks
525. Test specifications for timber

Great Britain

526. Air-break knife switches and laminated brush switches for voltages not exceeding 660 volts (excluding totally enclosed and flame-proof type)
527. Asbestos cement pressure pipes
528. (The) attachment of circular metal-cutting saws (for hot working)
529. Bayonet lamp-caps and metal-cased bayonet lampholders for voltages not exceeding 250 volts
530. Bus-bars and bus-bar connections in air, oil, or compound
531. Coal-tar naphthas (coal-tar solvent naphtha, heavy coal-tar naphtha and heavy coal-tar naphtha, unrectified)
532. Concrete plain roofing tiles
533. Derrick cranes (hand operated)
534. Enamelled high-conductivity annealed copper wire
535. Fire resistance, incombustibility and non-inflammability of building materials and structures (including methods of test)

Standardization Cited As a Safety Measure

An example of the many hazards which result from permitting full scope to the expression of individual taste is found in airplane instrument panels, according to the *Pilot*, Los Angeles.

Although each may have its advantages and be easily read by those familiar with them, their differences often cause unnecessary inconvenience to other pilots who are accustomed to another arrangement of instruments.

A standardized arrangement of instruments would greatly facilitate piloting for pilots who change from one ship to another, and would prevent accidents which might otherwise occur through improper correlation of instrument readings.